Volunteer Firemen

SEPTEMBER

1941

NATIONAL FIRE PROTECTION ASSOCIATION
INTERNATIONAL
60 Batterymarch Street Boston, Massachusetts

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ACME NEWS PHOTO

The picture on the left is one of the many in our files showing the hazards of present day rescue work. It PROVES, beyond the slightest doubt, the desperate need of B-E EVACUATORS in any modern fire department. It increases the safety of those being rescued by a thousandfold. It eliminates the risks to which firemen are subjected in rescue work.

- ★ **The cost of B-E EVACUATORS is small compared to their safety value per capita in your community. They will pay you dividends in the protection they afford.**
- ★ **Almost universal in application, a B-E EVACUATOR can be easily carried up a ladder by any fireman and attached to any window and most roof parapets. IF YOU CAN RAISE A LADDER—YOU CAN USE AN EVACUATOR!**
- ★ **The workmanship and materials employed in the manufacture of B-E EVACUATORS permits us to guarantee them without time limitation.**

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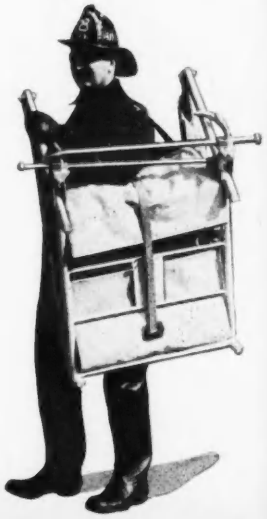

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Volunteer Firemen

Volume 8 Number 9

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THE cover picture this month, contributed by Fire Marshal Louis G. Schraffenberger of Cincinnati, shows a big fire that occurred in his city this summer. The plant was occupied by a foundry supply concern. It was an old 6-story brick-joisted structure with open elevator and stair shafts and was inaccessibly located along the railroad tracks in the rear of other buildings. The fire started in a second floor room in which linseed and crude oil was heated on hot plates for mixing. It is believed that the fire resulted from careless smoking by the attendant. He evidently fought the fire for ten minutes before reporting it to his superintendent in another building. The superintendent then ran to see that there really was a fire before calling the fire department. When firemen arrived the building was seriously involved. Closed iron shutters and box cars spotted beside the building made it a very difficult fire to attack. Heavy streams were used at the outset, with six 1½-inch tips in operation. The total loss was estimated at about $40,000.

SPEAKING before the first class of a defense training course for police and fire officers at Edgewood Arsenal, Director F. H. LaGuardia of the Office of Civilian Defense described some of the things that his office is planning in the event it becomes necessary in this country to protect the civilian population against air raids. He mentioned the need of enrolling and training auxiliary forces for fire fighting to supplement existing fire departments and also the problem of providing these auxiliary fire forces with the necessary apparatus.

Currently, the Office of Civilian Defense through the governors of the several states is making an inventory of fire apparatus. Every city should cooperate in promptly furnishing the information to the central authority in their state which may be collecting the information when it is asked for.

A SHORT time ago a five-alarm fire destroyed a four-story brick macaroni factory in Philadelphia. The fire started in the basement and had involved the entire building when the first firemen arrived. More than 300 firemen and officers from 24 companies were required to confine the fire to this plant. Chief Engineer William Cowden of the Philadelphia Fire Department reports, "We are of the opinion that with the use of a sprinkler system this fire would have been confined to the basement of the building."

THE importance of adequate fire protection for plants engaged in defense production is indicated by a fire recently reported from an aircraft factory at Vancouver, B. C. The fire started in the administration building of frame construction shortly after the building was completed and occupied. The building was not sprinklered and as private fire pump equipment had not been completed when the fire occurred a total loss resulted. The Vancouver Fire Department pumping from a nearby river saved the main plant thirty feet distant although 180 feet of the wall was damaged. The replacement structure being erected following this fire is being sprinklered and private fire pump capacity is being increased.

This fire well illustrates the wisdom of a recent order by the U. S. Defense Plant Corporation requiring proper fire protection during the construction of defense plants. All future contracts for the construction of such plants are to contain clauses providing for the installation of fire protection facilities as the work progresses. This is in recognition of the great importance of the fact that fires during construction or before protective equipment is installed may delay future production of products needed for defense.

These contracts provide that hydrant protection shall be made available as soon as combustible material, the loss of which by fire would delay the construction program, accumulates. Underground water mains, hydrants and hose equipment must be ready for permanent use not later than the time when thirty per cent of the construction program is completed. Sprinkler installation is required to follow closely the completion of roofs and must provide protection before an appreciable amount of equipment is moved into the plants.

THE South-Eastern Underwriters Association reports a fire that caused about $120,000 loss to a woodworking plant at Emporia, Virginia. Because threads on private hydrants were not interchangeable with fire department hose couplings and no adapters were available, the fire department was unable to connect to private hydrants. With plant fire pumps drawing from the city mains, the fire department was also unable to obtain sufficient water through long lines from a town hydrant. In the interest of defense production, fire equipment at industrial plants should have standard couplings.

LAST month seven departments with 84 men joined the Volunteer Firemen's Section for the first time. Forty-two departments with 868 men renewed membership. This makes a total enrollment of 741 departments and 14,983 men. The following departments are newly enrolled:

Plomb Tool Fire Prevention Association, Los Angeles, California.
Vallejo Fire Department, Vallejo, California.
Surfside Police Department, Surfside, Florida.
Oxford Fire Department, Oxford, Michigan.
Lordsburg Volunteer Fire Department, Lordsburg, New Mexico.
Union Mutual Fire Insurance Company, Evansville, Wisconsin.
Woodruff Fire Department, Woodruff, Wisconsin.

THE estimated U. S. fire loss for July, 1941, according to the National Board of Fire Underwriters is $23,698,000. This figure is based on notices of incurred loss received by company members of the Board, plus an allowance for unreported and uninsured losses. Losses for the first seven months of 1941 are $2,741,280 less than the losses for the same months last year. The following table shows the losses for the first seven months of both 1940 and 1941.

	1940	1941
January	$36,260,650	$26,470,000
February	34,410,250	26,102,000
March	29,788,800	31,471,000
April	26,657,190	29,330,000
May	23,446,590	25,637,000
June	19,506,000	24,943,000
July	20,322,800	23,698,000
Total 7 months	$190,392,280	$187,651,000

Exhibition booth by Cincinnati firemen.

Fire departments urge clean-up of rubbish hazards.

Los Angeles Fire Dept.
Stunts with apparatus.

Fire Department _____ **DWELLING OR STORE INSPECTION** Date ____ 19____

Occupant _____
Street Name — Street No.
Owner or Agent _____ Address _____

BUILDING
Construction _____
In good repair _____
Dilapidated or unsafe _____
Windows and doors intact _____
Kind of roof _____
Vacant _____

HOUSEKEEPING
Rubbish _____
Newspapers _____
Matches (kind, location) _____
Kindling _____
Basement clean _____
Attic clean _____
Mops, oily rags _____
Fire extinguishers _____

CHIMNEYS
Built from ground up _____
Cracks _____
Mortar _____
Clean _____
Repairs needed _____

HEATING EQUIPMENT
Protection beneath _____
Stovepipes secure _____
Combustible material near _____
Metal ash container _____

FLAMMABLES
(amount and storage)
Fuel oil _____
Gasoline _____
Kerosene _____

ELECTRICAL
Wiring _____
Appliance cords _____
Fuses _____

OUTSIDE OF HOUSE
Rubbish, trash _____
Where trash is burned _____
Garage _____
Other buildings _____
Exposures _____
Other hazards _____

RECOMMENDATIONS

Inspector _____
Co. No. _____

A form for dwelling or store inspection used by fire departments.
Public Administration Service.

Paramount Studio.
Stunts with pretty girls.

Fire Department Activities for Fire Prevention Week

FIRE DEFENSE is the keynote of the 1941 Fire Prevention Week, October 5-11. Every effort must be made to conserve for defense needs valuable properties that are annually lost through preventable fires. No country can afford the luxury of more than $300,000,000 loss by fire each year.

No longer does the expression "I'm insured" suffice to excuse neglect of common sense fire prevention measures. Mere indemnity for damage done by fire cannot be considered sufficient protection at a time when goods destroyed cannot be replaced promptly.

During the present emergency continued production is essential. Time is one of the most essential elements in modern war. Defense materials which arrive "too late or too few" because *FIRE* held up production schedules are of little use. The important part that destruction by fire plays in delaying defense production should be evident from the thousands of incendiary bombs dropped on production centers in war areas and the well known use of fire by saboteurs.

Some may say, "But our town is not a defense center. Why must we be concerned with fire prevention at this time?" Many building materials are on a priority basis at the present time and all available stocks of certain commodities are going to defense plants. When a fire occurs in an ordinary dwelling or store your local building supply dealer may be forced to say, "Sorry, we can't get hold of the materials you need for repairing your property." There are even strong indications that the U. S. Government plans to restrict the construction of private dwellings and give preference to housing projects to care for workers in defense areas.

During depression years, home building failed to keep pace with normal needs. Now is no time to allow thousands of homes to burn in fires that might easily have been prevented. The same thing holds true for the contents of homes. Conservation is an important component of the total defense effort. There may be difficulty in replacing furniture, household goods, and even clothing destroyed by fire. Losses in a single fire are likely to be greater because costs are up. The one solution indicated is to prevent *every* fire.

Every fire department has a real fire prevention job to do and Fire Prevention Week, October 5-11, this year, is none too soon to enlist the aid of the entire community.

There is one outstanding way to make this fire prevention effort really effective. It is the same method that put over the recent drive for old aluminum, namely, a house to house canvass. Last year many fire departments made Fire Prevention Week the occasion for their fall dwelling inspection campaigns. This year every fire department, whether paid or volunteer, should call upon every householder and stress the importance of fire prevention at this time and point out the danger of fires this winter.

When making a call firemen can call attention to the simple fire hazards that are so often found in homes and shops and can suggest means of eliminating such hazards. It is a good plan to leave some fire prevention literature at each home where an inspection is made. It is also a good idea to fill out an inspection form similar to the one illustrated on the previous page. Such an inspection form serves as a useful check-list and is useful as a record of items to follow-up in subsequent visits. (Illustration shows a model form which may be printed locally or purchased from Public Administration Service, 1313 East 60th Street, Chicago, Ill. The forms are 8 x 5½ inches and come gathered into duplicate sets, blue and pink, 50 to a book. The cost of these sets is $2.00 per 100, $13.25 per 1,000.)

In addition to the important matter of home and store inspections there is much else that a fire department can do to observe Fire Prevention Week next month. Perhaps typical of what can be done is the program put on last Fire Prevention Week by the fire department of Shreveport, Louisiana. Over half a million people heard a dramatized fire fighting demonstration directed by Chief S. J. Flores broadcast over radio station KTBS in a 30-minute evening program. The demonstration was staged at the fire department drill tower where chemical smoke bombs provided the appearance of a real blaze. Under fire department flood-lights ladders were raised, rescues made, lines advanced as Chief Flores stationed near a microphone gave his orders. The radio demonstration also included a visit to fire alarm headquarters where the radio audience got a first-hand picture of how fire alarms are handled and how the fire department organization functions.

The Shreveport fire prevention program didn't stop with the one good demonstration. Sunday brought announcements from pulpits and notices in church papers. Boy Scouts distributed thousands of pamphlets telling of home fire hazards. There was a down-town window display of fire fighters' tools and fire prevention material. On Monday the annual parade of fire equipment was held. During the week the aerial ladder of the department made appearances at the various schools and a demonstration of equipment was given over the public address system installed in the truck. The department inspector gave fire prevention talks and all schools in the city and many in surrounding areas were given supervised fire drills by firemen and representatives of the Chamber of Commerce Fire Prevention Committee.

Another high-light of the week was a luncheon for the Lions Club and other civic leaders at the Central Fire Station on Wednesday. This has been established as an annual affair and has created wide interest by the civic leaders of the city. Shortly after lunch had been served by the firemen they went out on an actual alarm.

The radio stations of Shreveport all joined in the Fire Prevention Week program. Several transcriptions were made by fire department officials and by civic leaders. These were used throughout the week. Spot announcements were made on news broadcasts and during station breaks. Short fire prevention talks were also made at various club meetings.

The Shreveport Fire Department is convinced that fire prevention does pay. As a result of the Fire Prevention Week program the people of that city have come to know their department better, and have a closer feeling toward the work of the fire department. Annual fire losses in the city have been cut an average of a half-million dollars a year below what they were when the fire prevention program first started. So important has fire prevention become in Shreveport that a year-round fire prevention campaign is carried on by a Committee of the Chamber of Commerce under the direction of Chief Flores.

The 1941 Fire Prevention Week Poster

Fire Prevention Week Campaign Material

Charges must be made to cover cost of quantity distribution as below:

Poster. (FPW 1) A striking red, white and blue Prevention Week Poster, 12 x 16 in. "Defend Against Fire." Imprinting if desired. Sample copies gratis, $1.00 per hundred, $8.50 per thousand.

Flyer. (FPW 3) A striking flyer, "Keep Fire in Its Place," in red, white and blue, 6 x 9 in., emphasizing fire fatalities, and giving the essential rules for fire safety. Intended for public distribution in schools, etc. Sample copies gratis, 50 cents per hundred. $3.50 per thousand. (Imprinting, if desired, at additional cost.)

Fire Defense Quiz. (FPW 4) An eight-page folder containing (a) short text on fire prevention and protection, (b) quiz on text, (c) answers. Interesting, entertaining and instructive. For adults as well as children. Sample copies gratis, $1.00 per hundred, $8.50 per thousand.

Fire Prevention Picture Book. (FPW 5) A 16-page 6 x 9 in. booklet for school use, with pictures of familiar home hazards, showing things children can do to prevent fires. The pictures are in outline form for coloring with crayons. The back page is left blank for local imprinting. Price 5 cents per copy, $4.00 per hundred, $30 per thousand. (Imprinting if desired, at additional cost.)

Fire Prevention Week Handbook. (FPW 6) This is the sixth edition of a fifty-page illustrated handbook going into all phases of Fire Prevention Week and Clean-Up Campaigns. It is intended primarily for the guidance of committees and others planning Fire Prevention Week. It is also valuable to teachers and school superintendents interested in school fire prevention exercises. Price 15 cents per copy, $10.00 per hundred.

Facts About Fire. (FPW 7) A 1941, 16-page Supplement to the Fire Prevention Week Handbook. This pamphlet contains material valuable for preparation of speeches, newspaper publicity, radio broadcasts, etc. Price 5 cents per copy, $3.50 per hundred.

Keep Your Home from Burning. (FPW 9) A two-color folder designed for general distribution to homes. The last page is left blank for special imprinting if desired. Sample copies gratis, $1.50 per hundred, $8.50 per thousand. (Imprinting, if desired, at additional cost.)

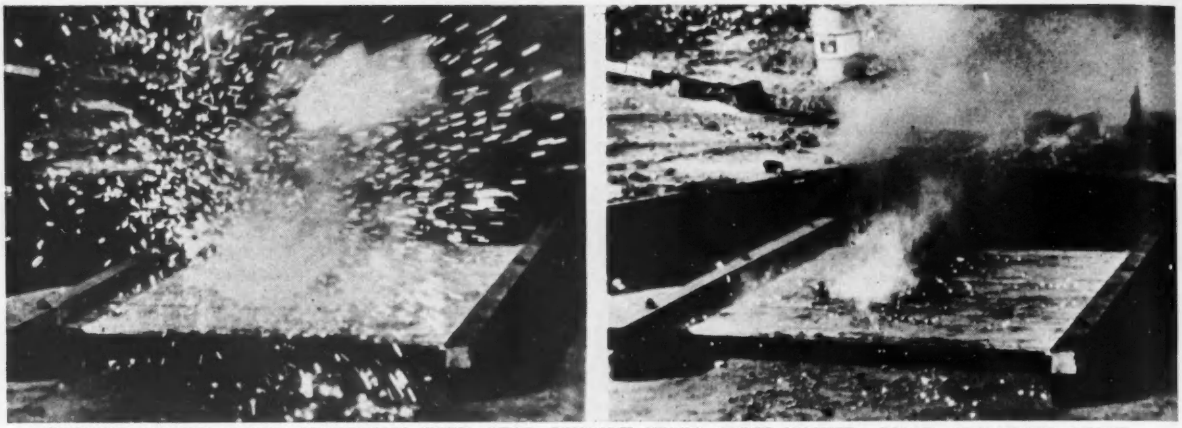
All the above prices are F. O. B. Boston. Orders will be shipped express collect unless other shipping instructions are received. Single copies and small orders will be sent parcel post prepaid. Designating numbers in parenthesis after each title above are for convenience in ordering by telegram. Order early, avoid delay.

National Fire Protection Association
60 Batterymarch St., Boston, Mass.

Detroit firemen use model home to point out fire hazards.

Shreveport, Louisiana, firemen stage radio show.

THINGS YOU HAVE HEARD ABOUT INCENDIARY BOMBS MAY BE QUITE WRONG
HERE'S EXPERT COMMENT ON SOME OF THE MISINFORMATION GOING AROUND



BURNING OF TWO-POUND MAGNESIUM BOMB—LEFT, PRIMARY STAGE (FIRST MINUTE)—RIGHT, SECONDARY STAGE

Thermit or similar igniting mixture is set off when the bomb lands, and burns with considerable spattering as shown (left) for about one minute. When the igniting mixture is used up, the magnesium body of the bomb itself burns (right). At this stage the bomb can be closely approached. But not in too much of a hurry! There are reports that about one in 50 of the 2-pound bombs have a small explosive charge set to go off about 2 minutes after impact. All of the large incendiaries, 6, 25 and 50 pounders, may be expected to explode. Though the explosion is one of low intensity, it is both dangerous and useless to attack them before the explosion takes place.

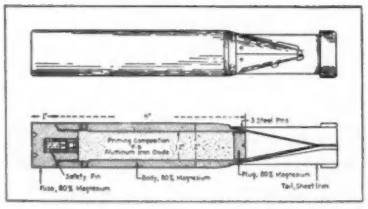
INCENDIARY BOMB FIRES

By Arthur B. Guise, Chemical Engineer
Factory Mutual Laboratories

THERE are certain statements in the material following that will disagree with what you may have read or heard elsewhere with regard to incendiary bombs. One reason for this is that much of the instruction being given as to how to handle incendiary bombs is still based on the British Government Air Raid Precaution Handbook No. 9, issued in 1938 *before* the war started. This handbook served its purpose excellently in preparing the British people for the intensive incendiary bomb raids which they suffered during the last half of 1940, but certain statements regarding incendiary bomb fires and certain techniques for handling the bombs have been modified by later information and experience.

My judgment, for example, would be that a person fighting an incendiary bomb fire should stay on his feet, where he can dodge and run if necessary, rather than in the prone position conventionally recommended for the operator of a stream from a stirrup pump line. Repeated tests show that the very fine spray produced by an English type stirrup pump nozzle is not necessarily the best spray for magnesium bomb fires. We found out that "snuffers" cannot really snuff out an incendiary bomb.

Theoretically, water is the wrong thing to use on burning magnesium; as a practical matter it often is the best. None of the ordinary fire extinguishers can extinguish burning magnesium, but where there are enough extinguishers available they can be used successfully to control incendiary bomb fires. They may be used to great advantage if we are ever up against air raid fires in this country, for example, in industrial plants where there are usually plenty of extinguishers and trained men to use them.



The accompanying text is from a talk given before the State Air Raid Precautions School for Industry held at the Massachusetts Institute of Technology in August. What is said here applies only to the type of incendiary bomb that consists principally of magnesium metal. The diagram shows the 2-pound size which is commonest, but bombs of similar design 6, 25, and 50 pounds in size are reported in use. Other types of incendiary bombs such as those employing thermit, sodium, phosphorus ur oil have been used so little that they do not appear to be a part of the present problem.

The author is particularly qualified as an expert on magnesium bomb fires. For over three years he has been investigating for manufacturers and their insurance advisers the fire hazard characteristics of magnesium metal and its alloys. Since the blitz, Mr. Guise and his staff at the Factory Mutual Test Station have been working on incendiary bombs. They have attacked them with extinguishers, hose streams, sand, sprays, powders — all the common extinguishing agents. From hundreds of practical tests, many carefully studied in motion pictures over and over, is derived this authoritative, first-hand information.

Those containing water such as soda-acid and foam extinguishers, and vaporizing liquid extinguishers containing carbon tetrachloride, will only intensify a magnesium fire. Water reacts with burning magnesium to supply oxygen and to release hydrogen which immediately burns. Carbon tetrachloride supplies chlorine so that magnesium chloride is formed in a rapid reaction. These reactions may take place with explosive violence.

The carbon dioxide from carbon dioxide extinguishers reacts with burning magnesium to supply oxygen and to release carbon monoxide gas which burns freely. However, this reaction is mild and not explosive in character. Dry chemical extinguishers contain a large percentage of carbonate which releases carbon dioxide on striking burning magnesium. The released carbon dioxide then reacts with the magnesium.

The water solution type extinguishers provide a water stream which can be used up to the limit of the capacity available. Tests have shown that two or more 2½-gallon extinguishers will ordinarily be needed to

British Combine

The English stirrup pump assembly is shown in use above. There is a foot grip on one side so that the pump may be stood in a bucket of water, and 50 feet of hose. It appears to be a practical, special-purpose equipment for air raid fires, having the advantage of allowing freedom in climbing over obstacles and working on roofs. Usually three persons are required, one to bring water, one to operate the pump, and one to handle the nozzle. Numerous American fire departments get the same sort of service in dealing with small fires on roofs, for example, by using a standard pump tank type extinguisher with a long length of hose. The pump tank type extinguisher has certain advantages in that it carries its own supply of water and frequently two men are enough to operate the unit described. Furthermore, the pump being inside the can is protected from dents.

Some A.R.P. schools put the operator of a water stream in an awkward, ridiculous and often unsafe position like this English housewife in the picture at the left practicing on an imaginary bomb. This is from following literally English instructions to lie in a prone position and direct a spray on the bomb from a distance of 30 feet. The prone position is supposed to protect against heat, glare and flying metal particles. But as soon as the primary stage of the bomb's activity passes, in about a minute, you can hold your hand within two feet of it! The glare is not enough to harm a fire fighter. During the primary stage it's a good idea to keep low, behind a door, furniture or other barrier, as you prepare to attack the fire. If the fire is in a small room it is usually necessary to keep near the floor to be out of the smoke. This is the best reason for keeping down. But a fire fighter on his feet is safer, from flying particles for instance, than in a prone position, and freedom to duck, dodge and run is essential.

One of Mr. Guise's staff demonstrates the use of a standard soda-acid extinguisher which is useful up to the limit of its extinguishing capacity. (The camera man is from Life Magazine.) The fire is a magnesium bomb which has been allowed to ignite combustibles, such as would ordinarily be found in a room. As the bomb has passed its primary violent state, the operator can work at close range. Most of his attention is given to knocking down the fire in the ordinary combustibles. A spray stream is produced with the thumb over the nozzle. One extinguisher was not enough to handle the fire. These tests showed that two or more 2½-gallon extinguishers are ordinarily needed for such fires.

hold in check a fire in ordinary combustibles set by the two-pound incendiary bomb.

The practical reason for using water on incendiary bomb fires is that the most serious fire is not the bomb itself, but the things to which it sets fire. If a burning incendiary can be seen through the smoke, it would be perfectly proper to direct a solid stream of water on the fire as long as care is taken not to hit the burning magnesium directly. The water wets down the surrounding combustibles and holds the fire.

Because a solid stream of water on striking burning magnesium may cause an explosion which will blow particles of the metal over a radius of 10 to 20 feet, water should be used on the bomb in spray form. There is considerable difference in the practical effectiveness of various sprays. The reason that the spray from the stirrup pump is not the best is principally its limited volume and range. A more effective spray is one considerably coarser, because a coarse spray has better range and penetration through fire drafts, and a greater wetting effect on surrounding combustibles. A suitable coarse spray may be produced from a 2½-gallon water type extinguisher or pump tanks by simply breaking the solid stream at the nozzle with the thumb.

British pictures have shown devices known as "snuffers" for handling incendiary bombs. These are not well named. They may be of some value in enabling a person to promptly pick up an incendiary and get it out of a building, but they will not extinguish it. This is because magnesium reacts with nitrogen in the air as well as the oxygen. Fresh air would be sucked under the snuffer if it was placed over a bomb with the idea of extinguishing it by the snuffing method.

Sand, talc, asbestos, ashes and similar materials will react with burning magnesium if these are used in an attempt to smother the bomb. However, British experience has shown that sand is definitely practical for use and is often the only smothering material available in large enough quantity.

Because sand frequently fails to extinguish incendiary bombs, it is necessary to cover the bomb with it as quickly as possible so that the greatest cooling effect is achieved. The incendiary should then be shoveled into a pail containing sand. Finally, it should be covered with sand and the handle of the shovel passed underneath the bail of the pail and the bomb carried from the building.

Among smothering materials practically inert to chemical action with burning magnesium are finely divided steel or cast iron, graphite, and a special extinguishing powder which has been developed for the purpose. The steel and cast iron in practice form a rusty mass. Iron rust reacts with burning magnesium in a thermit reaction which can be explosive. Graphite should be a real extinguishing agent but has not been thoroughly tested on magnesium fires. The special extinguishing powder has been given thorough test and is a true extinguishing agent. Unlike sand which merely covers up the burning bomb, the special powder extinguishes the burning metal.

Illustrating by means of an ordinary garden hose nozzle the sort of spray stream desirable for incendiary bomb fires. The fine spray left, made with the nozzle nearly in closed position, has limited range and volume. The coarse spray made with the nozzle near the full open position, right, has relatively much better range, volume and wetting power.

Oklahoma A. & M. College Course In Firemanship Opens For Fourth Year

THE only regular college course in firemanship this month opens for a fourth year at Oklahoma Agricultural and Mechanical College, Stillwater, with prospects for the largest enrollment of any year thus far. Fourteen men from four states who were enrolled in the course last year have indicated that they will be back for a second year of firemanship training. A substantial number of new students from Oklahoma and nearby states plan to start the course this year.

The college offers an attractive setup for young men who want to make fire fighting their profession. Students enrolled in the course are quartered in a modern four-door fire station built by the college and operated as a unit of the Stillwater Fire Department. While taking the course the students serve as members of the fire department under the direction of Chief J. Ray Pence. Apparatus at the college station includes a new 750-gallon pumper purchased for the college by the state and a new 600-gallon pumper provided by the city to protect the area about the college.

The college fire station also includes lecture halls and classrooms for the firemanship students. At the rear of the station is a modern drill tower. Instruction is under the direction of Professor R. J. Douglas, former fire chief of Moorefield, West Virginia.

The firemanship course is one of several two year courses given at the college. For those who wish to obtain a degree the firemanship course provides two years' credits toward the four years' work needed to obtain a degree.

Those interested in attending the course should apply to the Oklahoma Agricultural and Mechanical College, Stillwater. Tuition for the course is nominal. Students from other states are admitted on the same basis that Oklahoma students are admitted to state colleges in the various outside states.

Fire station at Oklahoma A. & M. College, Stillwater, where students of the firemanship course are housed during the college term.

New York Adopts Training Program for 200,000 Volunteer Firemen

UNDER the Bureau of Public Service Training of the State Education Department, an instructional staff of six former fire department officers has been employed to organize an emergency fire defense training school in each county of the state. Retired Battalion Chief James J. Deasy of New York City, who for several years has been engaged in the training of volunteer firemen, is chief instructor. These schools are intended to give instruction to some 200,000 volunteer and auxiliary firemen. The program is under the direction of Albert H. Hall, Chief, Bureau of Public Service Training, State Department of Education.

As the first step in the new training program, the officers on the instructional staff completed an intensive ten-day course in teaching methods. This course also included the subjects covered in a standard curriculum which will be the basis of the state's fire defense training program. This standard curriculum of ten subjects was adopted in consultation with a committee of fire chiefs representing each section of the state. The curriculum consists of courses in first aid, methods of overcoming damage caused by various types of bombs, simplified hydraulics, effective use and conservation of water, methods of ventilation, overhauling and salvage, use of ladders, methods of fire prevention especially applicable during wartime, and fire department organization and discipline. Motion pictures of fire fighting in English cities during the war, as well as charts and other demonstration material, will be used.

Where zone fire schools already exist and are available in nearby cities they will be utilized in conducting the county fire training schools. Text material will be published by the State Department of Education.

Instruction is to be given first in rural areas adjacent to defense production centers. At the suggestion of fire chiefs, it was decided to also give the training to civilian men and women between the ages of 18 and 55. The courses will be given to the civilians by volunteer fire chiefs who have completed the first training. The cooperation of local authorities including fire chiefs is to be sought in arranging for the local courses.

Report on Florida Fire College Accomplishments

THE 12th State Fire College held at Daytona Beach, July 21-25, had an attendance of 220 men of whom 153 received certificates for completing one of the six 5-day courses given this year, according to a report by J. F. MacMillan, Coordinator. The subjects offered in the six courses were: Forcible entry and minor extinguishment, Chief W. R. Anderson, Fort Myers, instructor, 17 certificates awarded; Ladder and rescue practices, Captain J. W. Davis, Miami, instructor, 14 certificates awarded; Hose and fire stream practices, Assistant Chief J. R. Larrabee, West Palm Beach, instructor, 30 certificates awarded; Salvage and overhaul practices, Lieutenant A. E. Erwin, Jacksonville, instructor, 12 certificates awarded; Fire fighting tactics, Assistant Chief J. B. Chancey, Jacksonville, instructor, 33 certificates; and Fire defense service training, Chief J. W. Just, University of Maryland, instructor, 47 certificates.

The men taking each of the unit courses spent three hours each morning in classroom work and three hours each afternoon in drill practices and outside work. Each evening was devoted to general assemblies where lectures and demonstrations were given. Men attending the school represented 71 cities and towns and 5 army and navy posts located in Florida. Six firemen were awarded diplomas for having completed five years of work.

FIRE SCHOOL REPORTS

New Mexico. Attendance figures for the Annual Fire School held at Hot Springs in May show that 127 firemen were present from 37 departments, including representation from one department across the line in Mexico.

Texas. Attendance at the 12th Annual School for Firemen held at the A. & M. College of Texas during July set a record with 521 students from 283 towns.

West Virginia. The attendance at the 11th Fire Service Extension School held at Morgantown during July totaled 160 men.

State Fire School Calendar

13th Kansas	Sept. 2-5	Lawrence
12th Maryland	Sept. 2-5	College Park
11th Colorado	Sept. 3-4	Steamboat Springs
2nd Montana	Sept. 21-27	Polson

"The boys are playing with that MACK pumper again!"

Type 80,750-gallon centrifugal pumper with semi cab — one of six being operated in Fort Worth, Texas.

IT IS THE experience of fire departments the country over that Mack pumpers can be depended upon for superlative performance —that Mack power and stamina live up to the most urgent and gruelling demands of service.

In fact, not in pumping alone, but in every detail of mechanical function, Mack fire apparatus is capable of exceeding the most rigorous official performance requirements. And is singularly free from mechanical failure.

To help explain why Mack apparatus does so well, we offer these few simple truths: That Mack leads the industry in concentrating on the manufacture of vital parts in *its own factories* under very rigid supervision. . . . That Mack's resources, the largest in the fire apparatus industry, are able to support large-scale research and experiment for constant improvement. . . . That Mack provides 70 strategically located direct factory branches for speedy, economical, *efficient* servicing.

Write for complete information on this superior fire apparatus today.

The Mack Fire apparatus line includes triple and quadruple pumpers from 200 to 1500 gallon capacity, hose wagons, city service ladder trucks, squad cars—comprising 14 distinct and specialized models. Mack is proud of building the best. We invite comparison. We solicit inquiries.

Mack

MACK MANUFACTURING CORPORATION, FIRE ENGINE DIVISION, NEW YORK, N. Y.

FYR-FYTER
INSTANT
Saves Human Life

When Mr. and Mrs. Ladd, while returning to their farm home with a new auto, ran off a culvert and overturned, killing Mr. Ladd and pinning Mrs. Ladd under the car which was rapidly being consumed by flames—a neighbor of the Ladds, Mr. A. O. Barrett, came to the rescue with his 1¾-gallon Instant and the flames "died instantly." According to the last report from Dealer Frank Tilton of Washington C. H., Ohio, "I am glad to report that hopes are held for Mrs. Ladd's recovery."

SALESMEN WANTED

If you are interested in adding to your income by spare time work or in building a permanent business for yourself without investment in stock, fixtures, etc., write for our new Dealer's Plan to

THE FYR-FYTER COMPANY
Dept. 20-69 DAYTON, O.

FEDERAL VERTICAL SIRENS

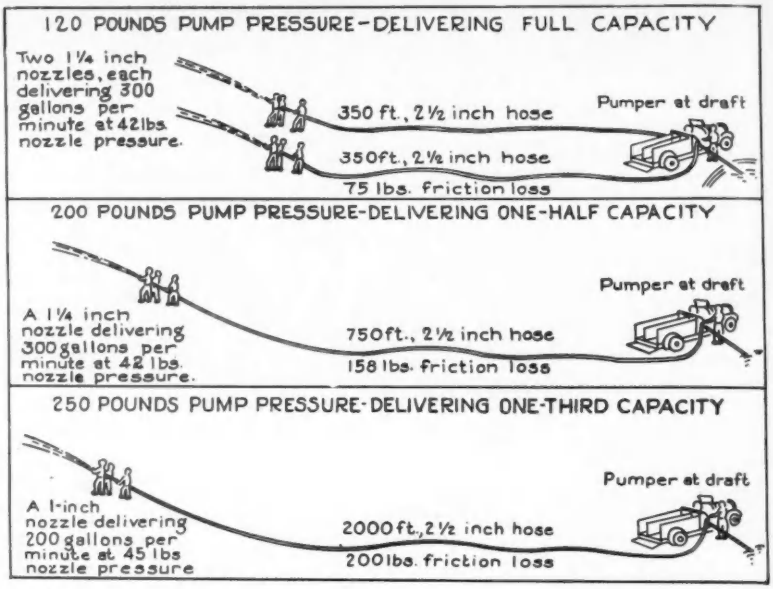
are known for

- DEPENDABILITY
- HIGH QUALITY
- ADEQUATE POWER

made in capacities from 1 to 7½ hp.

Federal Electric Co., Inc.
"Siren Headquarters"
8717 S. State St. Chicago, Ill.

What Work Will a 600-Gallon Pumper Do?


120 POUNDS PUMP PRESSURE-DELIVERING FULL CAPACITY
Two 1¼ inch nozzles, each delivering 300 gallons per minute at 42 lbs. nozzle pressure.
350 ft., 2½ inch hose
Pumper at draft
350 ft., 2½ inch hose
75 lbs. friction loss
200 POUNDS PUMP PRESSURE-DELIVERING ONE-HALF CAPACITY
A 1¼ inch nozzle delivering 300 gallons per minute at 42 lbs. nozzle pressure.
Pumper at draft
750 ft., 2½ inch hose
158 lbs. friction loss
250 POUNDS PUMP PRESSURE-DELIVERING ONE-THIRD CAPACITY
A 1-inch nozzle delivering 200 gallons per minute at 45 lbs nozzle pressure
Pumper at draft
2000 ft., 2½ inch hose
200 lbs. friction loss

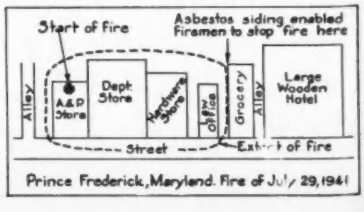
LAST month in VOLUNTEER FIREMEN we told what work a 500-gallon pumper could do. The next standard size pumper larger than the 500-gallon machine is a pumper that will turn out 600 gallons per minute. This size pump has some advantages for certain situations where a comparatively small size unit is desired but where greater than 500-gallon capacity is needed. For example, some communities have used 600-gallon pumpers in suburban areas believing that this size unit has sufficient capacity to do good work if called upon to deliver powerful streams at large fires. As a 1½-inch nozzle on a deluge set or other heavy stream device throws 600 gallons per minute when operating at 80 pounds nozzle pressure, a single 600-gallon pumper can supply such a stream where the lines are not too long.

As shown in the above illustration, when operating at capacity a 600-gallon pumper can supply two 1¼-inch nozzles through two 350-foot lines of 2½-inch hose. At a pressure of a little above 40 pounds per square inch 300 gallons will flow through each nozzle. At this flow the friction loss in 2½-inch hose is about 21 pounds per 100 feet. Thus when delivering capacity at 120 pounds pump pressure the 600-gallon pumper can supply the two 350-foot lines with a slight leeway to take care of possible elevation of the nozzle, above the pump.

At 200 pounds pump pressure the standard 600-gallon pumper is rated to deliver only 300 gallons per minute. This is equivalent to supplying one 1¼-inch nozzle through 750 feet of hose. If the 600-gallon pumper is operated at 250 pounds pump pressure it only delivers 200 gallons per minute or the amount of water discharged by a 1-inch nozzle at 45 pounds nozzle pressure. With this small flow the friction loss is cut to 10 pounds for each 100 feet of 2½-inch hose, making it possible to supply a single line of great length or to pump water to high elevations.

Asbestos Siding Helped Stop Blaze at Prince Frederick, Maryland

VOLUNTEER fire departments from Galesville, La Plata, Mechanicsville, North Beach, Upper Marlboro and West Annapolis, Maryland, fought a fire that recently destroyed four business buildings in the village of Prince Frederick, Maryland, with a loss reported at $200,000. The only local protection was a bucket brigade although after a previous big fire last winter residents had talked about organizing a volunteer fire department. Asbestos siding shingles on a grocery store only six feet from the fire in the path of the wind withstood the heat of the fire and enabled firemen to bring the blaze under control. Water supplies were limited to booster equipment, a 600-gallon water tank apparatus and water pumped from a pond three-quarters of a mile away.



Prince Frederick, Maryland. Fire of July 29, 1941

DEFENSE NOTES

Kansas

A TECHNICAL Advisory Committee for Fire Defense has been appointed by the governor to serve in cooperation with the Kansas Defense Committee. Approximately 30 Kansas fire chiefs are members of this committee of which State Fire Marshal Clyde Latchem serves as Executive Secretary. A fire apparatus tabulation for the entire state is being made and the committee is preparing an outline on the training of auxiliary firemen in the larger cities.

Texas

A DIVISION of Defense Fire Control has been established as a part of the National Defense Committee of Texas with State Insurance Commissioner and Fire Marshal Marvin Hall as Director.

NEW PUBLICATIONS

THE American Legion, Indianapolis, has issued three of a projected series of seven vest pocket sized manuals on civilian defense, as follows: No. 1, General Outline, Civilian Defense Procedures, 20 pp.; No. 2, Aircraft Warning Services, 36 pp.; No. 3, Air Raid Precaution Services (Wardens), 31 pp.

THE Bureau of Trade and Industrial Education of the California State Department of Education, Sacramento, has recently issued a 75-page "Operators Manual on Motor Vehicle and Pump Care and Operation." The manual was developed at a conference conducted by the Bureau of Trade and Industrial Education in cooperation with the State Division of Forestry. A list of 200 true and false questions is available covering the contents of the manual.

THE National Board of Fire Underwriters, 85 John Street, New York, N. Y., has issued a 1941 edition of their Suggested Fire Prevention Ordinance. This ordinance designed for adoption by cities and towns prescribes fire prevention and fire protection regulations for hazardous materials and processes. Copies may be obtained from the National Board upon request.

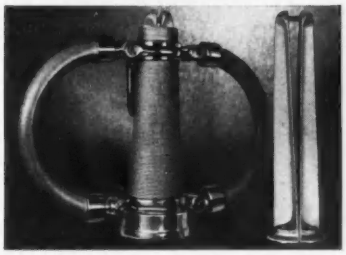
THE National Fire Waste Council, Washington, D. C., has issued a 22-page pamphlet, Safeguard Industry Against Fire for National Defense.

RESEARCH Bulletin 286, Precast Tile Beam Floor, is the title of an 82-page illustrated report of tests conducted by Professors Henry Giese and Charles T. Bridgman of the Agricultural Engineering Section of the Iowa State A. & M. College, Ames, Iowa. Precast tile beam flooring is a recently developed form of low-cost masonry floor construction which may encourage more widespread use of fire resistive construction for homes, barns and other structures.

TRANSPORTATION and Utilization of Liquefied Petroleum Gases. (Educational Bulletin No. 8, 14 pages, 15c.) International Association of Fire Chiefs, 20 West 40th St., New York, N. Y.

THE United States Department of Labor recently issued as Serial No. R.1301, a reprint from the Monthly Labor Review entitled "Salaries, Hours, and Working Conditions in Fire Departments of the United States." This study prepared by the Division of Construction and Public Employment of the U. S. Labor Department in cooperation with the Work Projects Administration, reports on working conditions of 66,878 fire department employees in 363 U. S. cities of more than 25,000 population as of July 1, 1938. This 17-page report is available from the U. S. Government Printing Office, Washington, D. C.

ANNOUNCEMENTS



PETER PIRSCH AND SONS CO., Kenosha, Wisconsin, announce the new Pirsch nozzle holder illustrated above. The holder is said to be designed to hold a nozzle firmly without the use of trick levers or threaded couplings to secure the nozzle. Nozzles may be lifted off or dropped on.

ACCORDING to an announcement of the Fire Engine Division of the Mack-International Motor Truck Corporation, the United States Army has just purchased thirty more Mack Type 70, 750-gallon triple combination pumpers for the protection of cantonments now under construction.

CARPENTER MANUFACTURING CO., 179 Sidney Street, Cambridge, Mass., have issued illustrated Bulletin No. 141 on the subject of emergency lighting. The bulletin shows "Master-Lights" manufactured by the company for use at disasters, floods, riots, as well as other situations where special lighting equipment is required.

INDIANS USE
NO
DAMAGING,
INJURIOUS
ACIDS---
NOTHING BUT CLEAR WATER

A TYPICAL TESTIMONIAL

D. B. SMITH & CO., Utica, N. Y.
Gentlemen: I had no idea INDIAN FIRE PUMPS were such a valuable piece of equipment. With the exception of four or five alarms we have used INDIANS at every fire and in most instances completely extinguished it with no other extinguishing agent. They make no mess and the clear water harms nothing. E. E. SALGE, Fire Chief.

SEND FOR DESCRIPTIVE CATALOG

D. B. SMITH & CO.

416 MAIN ST. UTICA, N. Y.
PACIFIC COAST AGENTS:
Hercules Equipment & Rubber Co. 550 Third Street San Francisco, Cal.
Carco-Conwhit Sales Co. 520 S.W. Pine St., Portland, Ore.
The Conwhit Co. Klamath Falls, Ore.
Mill & Mine Supply, Inc. 2700 4th Ave. S. Seattle, Wash.
Roy G. Davis Company 617 E. 3rd St., Los Angeles, Cal.
IN CANADA: Safety Supply Co., Toronto, Montreal, Vancouver

Announcement

The National Foam System, Inc., has perfected and is now in position to supply

NATIONAL "99"

Foam Chemical effective on fires originating in the organic solvents such as alcohol, ether, acetone, etc. This product listed by Underwriters' Laboratories and Factory Mutual Laboratories.

♦

NATIONAL FOAM SYSTEM, INC.

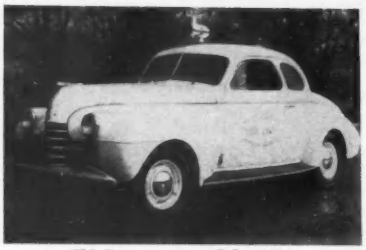
Philadelphia, U. S. A.

N. F. P. A. Membership

INDIVIDUAL membership in the National Fire Protection Association costs $10 per year. The membership plan for the Volunteer Firemen's Section is designed to give each fire company the advantages of N.F.P.A. membership. The fire company, as a member, receives at its headquarters a complete set of all regular N.F.P.A. literature, including the *Quarterly* magazine, as issued. In addition, as a special service to the Volunteer Firemen's Section, each fire company holding N.F.P.A. membership is entitled to have copies of the magazine VOLUNTEER FIREMEN sent to the home addresses of 10 firemen each month. If more than 10 firemen want to receive the magazine, an additional $1.00 should be sent in with the membership fee for each fireman in excess of 10 enrolled.

Because of the large amount of material mailed to members, not less than $10 can be accepted from any company.

Rebuilding a Fire Department



Chief's car, new July 1940.

600-gallon pumper, new May 1939.

65-foot aerial ladder, new June 1940.

750-gallon pumper, new May 1940.

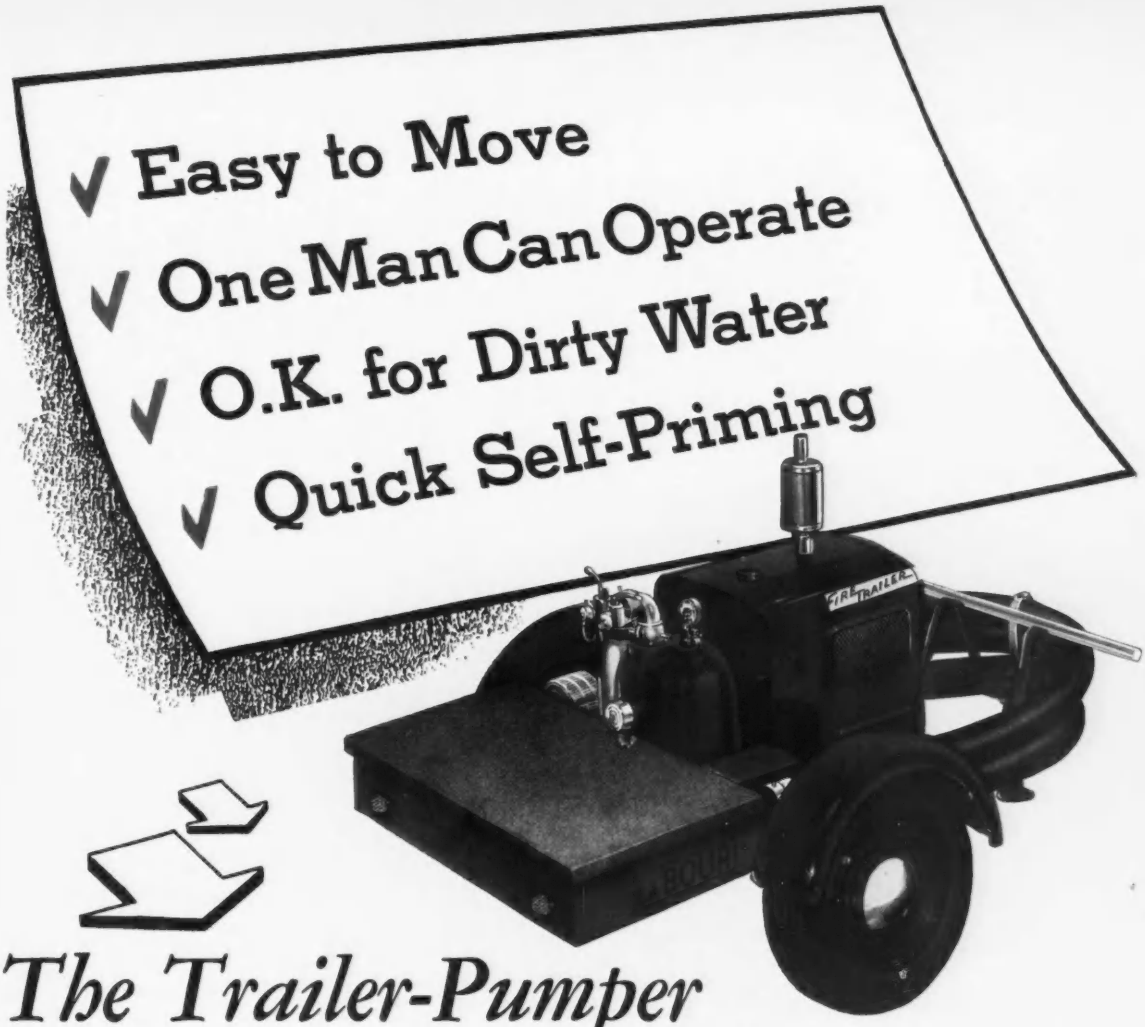
600-gallon rural pumper, new Feb. 1941.

Old pumper remodeled, September 1940.

Boat for rescue work, new January 1941.

JUST how much wide-awake business men can do when they get behind the fire department is shown by the results achieved by the Junior Chamber of Commerce of Chillicothe, Ohio. In 1937 this organization made a check-up of the local fire protection and found conditions far from satisfactory. The fire department was undermanned. There was no fire chief. Six lieutenants ran the department with no one officer in authority. Expenditures for motor apparatus had averaged only $1,740 a year although local property was valued at $22,000,000. The fire department lacked adequate hose and ladder equipment. Three of the four fire trucks in service were over-age. Hydrants were widely spaced and of poor design.

Headed by Chairman Harold L. Breiel, the Fire Prevention Committee of the Junior Chamber of Commerce joined the N.F.P.A. and sought expert assistance in outlining a program for rebuilding the fire department. The above pictures show the results of an apparatus rehabilitation program completed early this year. The new apparatus includes a 600-gallon rural pumper provided through the cooperation of four adjoining townships. Other improvements made include appointment of a chief, an assistant chief who acts as drillmaster, three captains and two additional firemen. New hose has been purchased. The city has bought the water system and is installing new hydrants of an improved type.



The Trailer-Pumper that Fits DEFENSE NEEDS

When littered streets make movement of large, heavy vehicles impossible, when man-power is limited, when the only available water supply is dirty with abrasive mud—in short, when fire must be fought under difficulties such as follow air raids or other disaster—then you will appreciate the qualities and features which make up the LaBour Fire Trailer.

It can be drawn to the fire by any passenger car—without special previous preparation. One man can move it about by hand on hard smooth ground, two men can move it almost anywhere. Pressure and volume characteristics have been created to permit one man to hold the nozzle and direct the fire fighting stream, and two such lines can be operated simultaneously if another man is available.

Carries its own suction and discharge hose, as well as the engine and the powerful self-priming LaBour Centrifugal Pump which requires no attention and will re-prime instantly should prime ever be lost. A real piece of fire fighting equipment, built to do a difficult job and do it well. For details, ask for your free copy of Bulletin 49.

THE LABOUR COMPANY, INC.

1581 Sterling Ave., Elkhart, Indiana

LABOUR—FIRE TRAILER—

The Biggest of All Man's Constructions

Over the high lines that stretch along the Columbia to Vancouver then across the river and down into Oregon's Willamette Valley the gigantic voltages of Bonneville must flow uninterruptedly. Two 48,000 K.V.A. generators and one 5,000 K.V.A. generator below the controlled waters of Bonneville Dam hum under the positive fire protection of C-O-TWO. South, over the high Sierras and past the scorching wastes of the Mojave Desert to Colorado River, Boulder Dam hurls out electric energy. The two 82,500 K.V.A. generators and switch controls are C-O-TWO protected against fire. Two of the world's greatest electrical power projects—both C-O-TWO protected.

IT'S SAFER *because* IT'S FASTER

Without damage C-O-TWO will smother a fire in split seconds. Whether it be a fire in the largest generator or in a dip-tank, a blaze in storage rooms where lacquers, enamels and thinners are kept, C-O-TWO and the fastest known extinguishing agent, carbon dioxide, will kill the fire with the least possible delay to production. Lately C-O-TWO has applied carbon dioxide extinguishers to branches of industry that cannot afford a minute shut down.

There is C-O-TWO equipment, large and small, to stop fires in most industries. For more about C-O-TWO write and our engineers will make a survey without obligation, of course. Write today.

One man, one 20 lb. C-O-TWO portable unit smothers a transformer fire.

C-O-TWO
FIRE EQUIPMENT CO.
10 EMPIRE STREET, NEWARK, N. J.

Sales and Service in the Principal Cities of United States and Canada

$10.00-$3.00-$2.00 EACH MONTH

PYRENE PRIZE LETTER CONTEST

YOU have probably been present at numerous fires where approved fire extinguishers have been successfully used. Every month cash prizes are paid out to those whose letters contain the best stories. More fires are put out with fire exinguishers than by any other means. The stories reported in this contest show the value of having an extinguisher handy.

It's the story we want, not letter writing ability. Get the facts down on paper and we will attend to any rewriting necessary to get the story into the space available in these columns.

The contest is sponsored cooperatively by the Pyrene Manufacturing Company of Newark, N. J., and VOLUNTEER FIREMEN to bring forth the lessons learned from actual fires of the value of fire extinguishers.

FIRST PRIZE—$10.00

FRANK J. WELLS, *Chief*
Fire Department, Charlemont, Mass.

Saved Own Home and Store

On a Monday morning wash day my wife arose early and lighted an oil burner in the kitchen range. About an hour later she informed me that the burner was not working properly. Thoughtlessly I opened the ash pan door of the stove to investigate and at once had a raging fire with the stove, floor and ceiling all ablaze. I had a foam extinguisher in my store below our apartment and in a very short time had the fire smothered with very little damage resulting. Apparently the night before the oil reservoir had been filled with the valves left open at the burner. The oil had drained through to the ash pan and was ready to flash. When the door was opened admitting air an explosion took place.

SECOND PRIZE—$3.00

W. FRANKLIN WILT, *Chief*
Fire Department, Lynchburg, Ohio

Prevented Bad Blaze

Three weeks ago the manager of a local chain store returned late in the evening to do some book work. Entering he found the place filled with smoke. Unable to locate the source he hurried across the street to my home for help. I ran to the fire station nearby and got out the truck. Arriving at the store I hurried in with a 1-quart carbon tetrachloride extinguisher. The smell of burning insulation filled the place. Opening the door to a storage room in the rear I found a refrigerator compressor motor just bursting into flame. While the manager pulled the electric switch I put out the blaze with about half the contents of the extinguisher. Just above the refrigerator motor was a wooden box overflowing with scrap paper and old window streamers. Tons of dry feed and empty cartons were stored around the compressor. If it hadn't been for the extinguisher I would have had to take time to connect a hose line and a bad fire could have started.

THIRD PRIZE—$2.00

G. E. SUMMERLIN, JR.
Fire Department, Mount Olive, N. C.

Two Fires at Once

On the night of May 22nd, the Mount Olive Volunteer Fire Department answered an alarm to a lumber mill where a fire in the boiler room was gaining rapid headway. Flames were leaping high in the air and naturally could be seen at a good distance, thus attracting a large number of spectators. Automobiles jammed both sides of the highway. I was operating the pumper when someone yelled. I looked around and saw an automobile about 100 yards away, on fire. There was no chance to move it. I glanced at the gauges on the pumper, decided I could chance leaving it a few moments and then grabbed a 1½-quart carbon tetrachloride extinguisher and in a few seconds had the fire out.

CONTEST RULES

1. Contestants in the Pyrene Prize Letter Contest must be members of their local fire department.

2. Letters are to describe actual experiences where an approved fire extinguisher of any make has saved lives or property.

3. Trade names may be used but will be deleted in publication. Publishers reserve the right to edit winning letters to permit publication.

4. Each contestant automatically vouches for the truth of the facts presented from his own or others' experience.

5. Only one letter may be submitted each month.

6. Letters must be legibly written in ink or typewritten on white paper, one side only. Preference will be given to letters not over 250 words in length.

7. Letters received after the 8th day of the month will be judged in following month's competition.

8. Monthly prizes in cash will be: 1st, $10.00; 2nd, $3.00; and 3rd, $2.00.

9. Address contest letters to Pyrene Prize Letter Contest, National Fire Protection Association, 60 Batterymarch St., Boston, Mass.

Modern Fire Protection Safeguards these
Famous Churches

A recent bulletin* of the National Board of Fire Underwriters contains the following statements:

"A study of church fires indicates one outstanding fact, and that is the importance of early discovery of the fire...However, these buildings can be given a high degree of protection through the installation of an automatic fire alarm system, which will assure the calling of the fire department before the fire has reached that stage where fire fighting is almost sure to be of no avail."

Shown here are some of the many churches that have met the hazards of belated discovery and delayed alarms by means of the Aero Automatic Fire Alarm System. Entirely automatic in its operation, Aero is on the watch for fire twenty-four hours a day, every day in the year, thereby assuring prompt discovery and prompt and accurate alarms, no matter what hour of the day or night a fire may break out.

*Bulletin #86, Committee of Fire Prevention and Engineering Standards, National Board of Fire Underwriters.

AERO AUTOMATIC FIRE ALARM

Controlled Companies of **AMERICAN DISTRICT TELEGRAPH CO.** *155 Sixth Avenue, New York, N. Y.*

CENTRAL STATION OFFICES IN ALL PRINCIPAL CITIES OF THE UNITED STATES

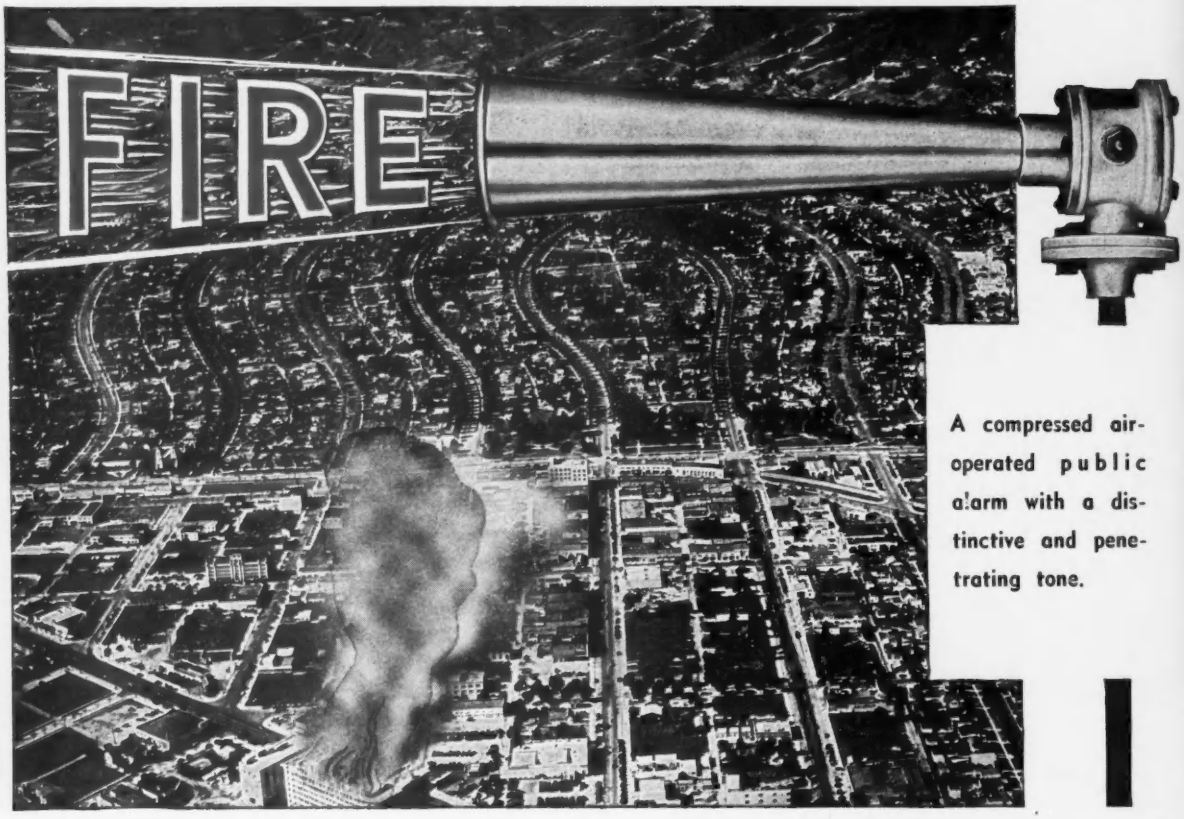
A·D·T

Electric Protection Services

AGAINST FIRE · BURGLARY · HOLDUP

A NATION-WIDE ORGANIZATION

THE DIAPHONE



A compressed air-operated public alarm with a distinctive and penetrating tone.

THE characteristics of the ideal public alarm necessarily include great sound producing power, carrying capacity, sound penetration, distinctive tone, ability to sound effectively coded signals, positive operation under all conditions, and reserve capacity. All of these qualifications are possessed by the Diaphone Compressed Air System.

Instances of electric power cessation . . sometimes for days at a time . . caused by storms, high wind, and sleet are not infrequent. The sleet storm in 1935 that crippled 75% of Georgia power lines, the hurricane of 1938 which left scores of New England communities in darkness for days, and the sleet storm of March 1940 which, within its path in Connecticut and adjoining states, inflicted even more damage than the hurricane, are recent occasions when many communities were without electric power for publicly announcing alarms of fire.

Diaphone compressed air alarm outfits are self-contained units which constantly maintain by means of automatically controlled compressors reserve capacity to sound a number of alarms. The Diaphone is the ideal public alarm. Write for catalog and estimates.

THE GAMEWELL COMPANY

NEWTON UPPER FALLS, MASSACHUSETTS